An Integrated and Sustained Ocean Observing System

The National Office for Integrated and Sustained Ocean Observing and Prediction
htttp://www.ocean.us.net

MMS OCS Policy Committee

CAPT David L. Martin, Ph.D.

Director, Ocean.US

May 21, 2002

Background

1999: Two NORLC-commissioned reports in 1999 recommended the establishment of a national capability for integrated and sustained ocean observations & prediction including the establishment of a national interagency program office

2000: (1) NORLC directed establishment of Ocean.US Office (Program Ofc).

(2) Formation of Ocean.US Office announced to Congress.

2002: (1) Congressional endorsement of national ocean observing system (Senate appropriations bills 107-42 and 107-43)

(2) Commitment of OSTP to participate in planning and implementation of national system

FY 2002 Senate Appropriations Report

SENATE *1st Session* 107–43
DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT, AND INDEPENDENT AGENCIES APPROPRIATIONS BILL, 2002

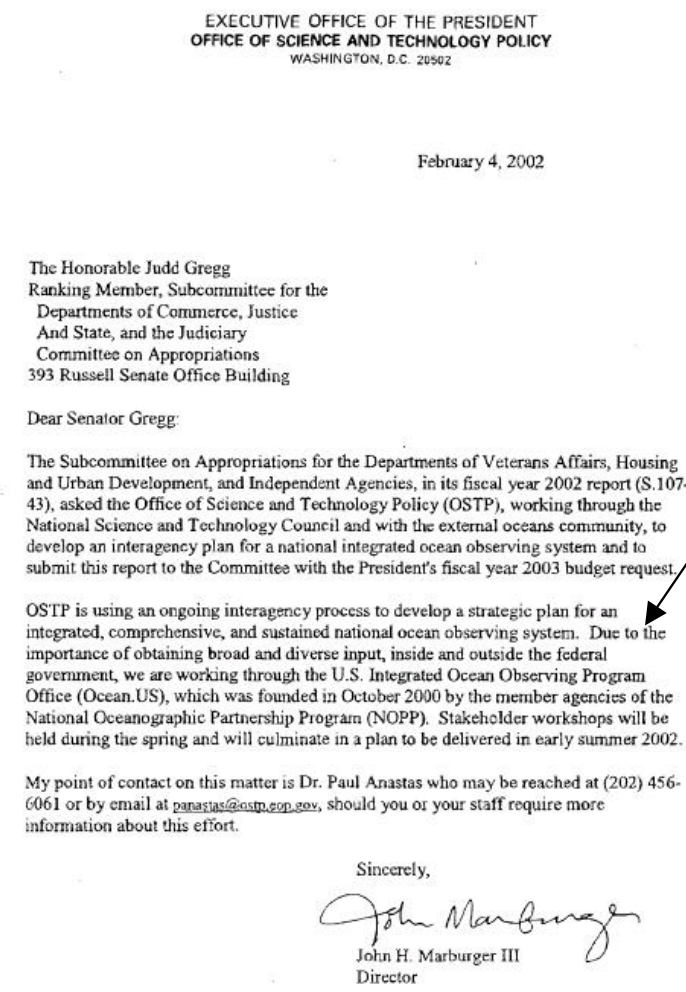
The Committee maintains significant interest in an integrated interagency ocean observing system. Such a system would bring together Federal, academic, State institutions, and industry into a coordinated system for monitoring U.S. marine waters. A coordinated national approach, linked effectively with similar programs in other nations, is an essential prerequisite for effective use and management of the oceans. …….. The Committee directs OSTP, working through the National Science and Technology Council and with the external oceans community, to **develop an interagency plan** for the research, technology demonstration and ultimately, the **implementation of an ocean observing system** and submit this report to the Committee at the time the President's fiscal year 2003 budget is released.

FY 2002 Senate Appropriations Report

SENATE *1st Session* 107–42
DEPARTMENTS OF COMMERCE, JUSTICE, AND STATE, THE JUDICIARY, AND RELATED AGENCIES APPROPRIATION BILL, 2002

Ocean Observing System.—The Committee maintains a strong interest in an integrated interagency ocean observing system. Such a system would bring together Federal, academic, and state institutions, and industry into a coordinated system for monitoring U.S. marine waters. A coordinated national approach, linked effectively with similar programs in other nations, is an essential prerequisite for effective use and management of the oceans……. A number of agencies including the White House Office of Science and Technology Policy, NOAA, the National Science Foundation, and the Office of Naval Research have varying interests and responsibilities in this area. The Committee directs the relevant agencies to work through the National Science and Technology Council and the National Oceanographic Partnership Program to **develop an interagency plan for an ocean observing system** and submit this report to the Committee with the President's fiscal year 2003 budget request.

Letter to the Senate from the President's Science Advisor



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

February 4, 2002

The Honorable Judd Gregg
Ranking Member, Subcommittee for the
Departments of Commerce, Justice
And State, and the Judiciary
Committee on Appropriations
393 Russell Senate Office Building

Dear Senator Gregg:

The Subcommittee on Appropriations for the Departments of Veterans Affairs, Housing and Urban Development, and Independent Agencies, in its fiscal year 2002 report (S.107-43), asked the Office of Science and Technology Policy (OSTP), working through the National Science and Technology Council and with the external oceans community, to develop an interagency plan for a national integrated ocean observing system and to submit this report to the Committee with the President's fiscal year 2003 budget request.

OSTP is using an ongoing interagency process to develop a strategic plan for an integrated, comprehensive, and sustained national ocean observing system. Due to the importance of obtaining broad and diverse input, inside and outside the federal government, we are working through the U.S. Integrated Ocean Observing Program Office (Ocean.US), which was founded in October 2000 by the member agencies of the National Oceanographic Partnership Program (NOPP). Stakeholder workshops will be held during the spring and will culminate in a plan to be delivered in early summer 2002.

My point of contact on this matter is Dr. Paul Anastas who may be reached at (202) 456-6061 or by email at panastas@ostp.eop.gov, should you or your staff require more information about this effort.

Sincerely,

John H. Marburger III
Director

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National Ocean Community-Consensus Building

- The national ocean community at the Ocean.US workshop consisted of:
  - Representatives from government (federal, state, and local), academia, private/industry
  - Individuals with necessary scientific and technical expertise
  - Representatives from coastal regions around the country
  - Individuals with a clear understanding of the needs of the many users of the data

An Integrated Ocean Observing System {IOOS}

- What do we need? (What ocean observations are necessary to address particular goals and objectives?)
- What do we have? (To what extent do current or planned observational systems address these same goals. Note: this is NOT merely a listing of extant or planned systems.)
- What are the gaps? (To what extent do current or planned systems fail to address the goals.)
- What are the resource implications in filling the gaps? (How to address these in a phased, prioritized manner?)

The IOOS: Why

- To address operational and research needs in:
  - **Detecting and predicting climate variability**
  - **Facilitating safe and efficient marine operations**
  - **Ensuring national security**
  - **Managing resources**
  - **Preserving and restoring healthy marine ecosystems**
  - **Mitigating natural hazards**
  - **Ensuring public health**

These are the principal objectives for a national ocean observing system.

Defining the IOOS: The Overall Process

- Phase 1: Theme focus to define and itemize thematically-required ocean observations
  - Based on Review Background Papers
  - Quantified in matrices (Subgoals/Products vs Variables)
- Phase 2: Stakeholder Inclusive Working groups
  - Prioritize Variables
- Phase 3: (a) Geophysics Discipline-based WGs examine technologies; (b) DAC WG define scope of IOOS D/IM; (c) Economics WG – define structure of regional IOOS analyses
- Phase 4: Implementation Plan
- Phase 5: Next steps & beyond

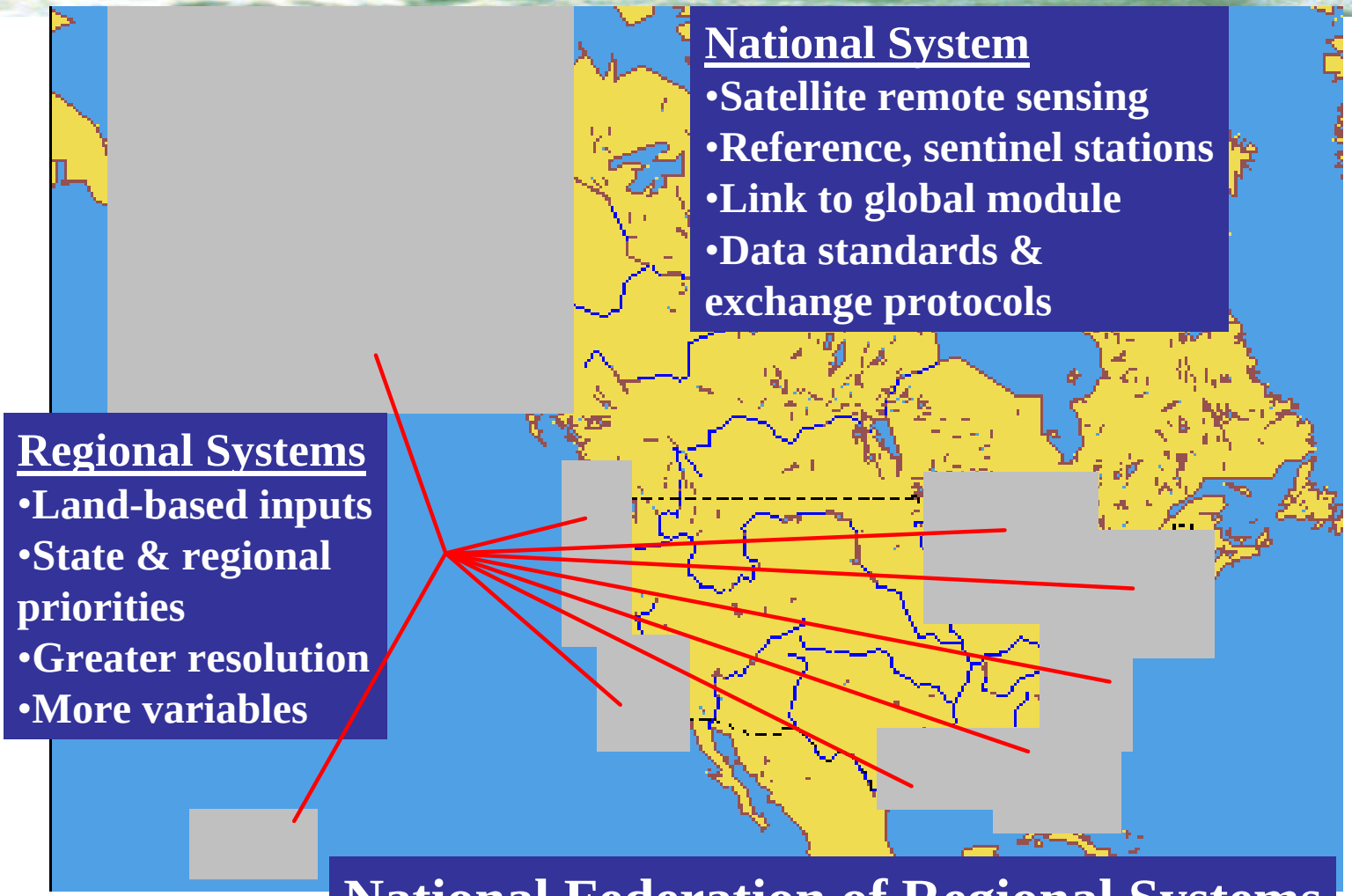
IOOS Global Component

- Part of an international, cooperative system
- Designed to observe and predict global, ocean-influenced phenomena, such as El Niño, extreme weather, climate variability, etc .
- Nearing operational and sustained status.

IOOS Coastal Component

- A joint federation of regional systems combined with a national observational backbone
- Addresses particular needs of regions while contributing to the national network of core observations
- Regional system will be a partnership of Federal, state and local governments, agencies and authorities, industry, academic institutions, and non-governmental organizations

National Federation



IOOS Global Component-Recommendations

- Fulfill and optimize the U.S. contribution to global initiatives
  - Optimize the global network of observations for climate and other goals
  - Transition remote sensing capabilities from research to operational modes for sustained observations;
  - Enhance and extend moored and drifting arrays (e.g. Argo, global ocean time series observatories) and additional international initiatives (e.g. Global Ocean Data Assimilation Experiment-GODAE)
  - Enhance blue water time series stations with biological and chemical sensors.

IOOS-Coastal Component Recommendations (1)

- Initiate, enhance, and expand the data management for the IOOS and ensure integration with the global component:
  - Design and implement an enhanced data and information management system to link all observational systems (across agencies and programs) to all data users.
  - Improve data management infrastructure.

IOOS Coastal Component-Recommendations (2)

- Enhance current federal observational networks. Enhancements to include:
  - Existing network of instrumented moorings
  - Existing network of tide gauges
  - Aircraft remote sensing capabilities
  - Program of ship-based cross-shelf surveys
  - Shore-based measurements

IOOS Coastal Component-Recommendations (3)

- Establish initial regional observing systems as proof of concept pilot projects.
  - End-to-end: Include three subsystems of observations, data communications and management, and data analysis and modeling. Driven and improved by user needs
  - Product development: Address national goals and be readily available to the public and other users.
  - Quantitative design: Optimize coastal network

IOOS Coastal Component-Recommendations (4)

- Sustain and improve the IOOS
  - Economic analysis: Refine utility of products, develop users, and provide basis for public education
  - Evaluation: Establish procedures for ongoing evaluation including input from stakeholders
  - Public education: Use data and information from IOOS to advance science and environmental education and public outreach

IOOS Implementation- Immediate, Necessary Actions

- Accelerate the implementation of the U.S. commitment to the global ocean observing system for climate change;
- Initiate a data communications and management system for the IOOS;
- Enhance/expand existing federal elements (buoys, water level sites, etc.); and
- Initiate pilot regional observing systems.